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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,194	12/21/2000	Tatsuya Ishii	040373/0301	7016

7590 07/16/2004

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EXAMINER
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DEPPE, BETSY LEE

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 07/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/741,194

Applicant(s)

ISHII, TATSUYA

Examiner

Betsy L. Deppe

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed April 23, 2004 have been fully considered but they are not persuasive.
2. In response to the applicant's argument that neither applicant's Fig. 2 nor Wittig et al. discloses a selector for selecting the gain, since Wittig et al. discloses that the gain is variable, it is implicit that there is a circuit that sets (i.e. "selects") the gain. Since the gain value G must be chosen/set, there is implicitly a means (i.e. "selector") for selecting the gain signal thereby reading on the claim limitation.
3. In response to the applicant's argument that there is no motivation to modify the structure of Figure 2, Wittig et al. discloses that applying a gain results in a smaller multiplier circuit without sacrificing multiplication accuracy. (See column 5, lines 37-40) Therefore, there is motivation to apply the teaching of Wittig et al. to the admitted prior art shown in Figure 2.

### ***Drawings***

4. The drawings are objected to because:  
in Figures 2, 4, 6 and 7, "INTEGRATER" should be "INTEGRATOR";  
in Figure 3, "MUTIPLIERIT" should be "MULTIPLIER"; and

in Figure 6, "MULTIPLIERIT" should be "MULTIPLIER".

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

5. The claims are objected to because of the following informalities:

in claim 1, "gain" on line 3 should be "a gain signal" and "a gain signal" on line 4 should be "the gain signal";

in claim 3, "and that both" on line 2 should be "wherein each stage" and "by each stage" on line 3 should be deleted for improved readability;

in claim 3, line 3, "delayed output" should be "delayed **data**" in order to be consistent with claim 4, line 5; claim 6, line 4 and claim 7, line 4;

in claim 5, "first to third" should be "first, second and third."

Appropriate correction is required.

6. Claims 4 and 5 are objected to because they are inconsistent with the detailed description corresponding to Figure 6. According to the respective claims, the first selector for selecting the gain switches its output at the same interval as the second and third selectors whereas Figure 6 shows the gain (SEL15 output) as switched at intervals different than the second and third selectors. Based on Figure 6 and the corresponding description, it appears that the gain is fixed for several time intervals and then switched whereas the claims language suggests that the gain is switched at each time interval.

If the claims are amended to be consistent with Figure 6 and its corresponding description, the description corresponding to Figure 7 must also be amended.

Appropriate correction or clarification is required.

### ***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 4-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what comprises the "two parts" or "m

parts" on line 3 of the respective claims, i.e. what is being referred to by the "two parts" or "m parts." For example, is it referring to two or "m" first selectors or is it referring to two or "m" circuits wherein each circuit is comprised of a first, second, and third selector and a first and second multiplier.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Wittig et al. (US Patent No. 6,606,641 B1 cited in the Office Action mailed February 6, 2004). Figure 1 of Wittig et al. discloses a gain regulation circuit with a first multiplier (12) for multiplying a coefficient sequence. (See column 4, line 63 - column 5, line 45) Since coefficient gain 16 is variable (see column 5, line 18), it is implicit that there is a selector that selects the value of G, thereby reading on the claimed invention. Although Wittig et al. does not teach incorporating this selector with the digital filter, it would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate/combine different components into one device in order to reduce the circuit size by using a single IC component to implement the circuit and designating the single IC component as a "variable-gain digital filter."

11. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art shown in Figure 2 of the application and Wittig et al. The admitted prior art shown in Figure 2 of the application discloses the claimed limitation except for a first selector for selecting a gain and a first multiplier for multiplying the gain with the selected coefficient sequence.

Wittig et al. discloses multiplying a coefficient sequence (10) with a variable gain (12 and 16) wherein it is implicit that the gain is selected by a selector. (See Figure 1 and column 5, lines 14-19) It would have been obvious to one of ordinary skill in the art at the time the invention was made to multiply the coefficient sequence outputted by selector 14 in Figure 2 of the application with a gain as taught by Wittig et al. in order to reduce the size of the multiplier in the circuit of Figure 2 without sacrificing multiplication accuracy. (See Wittig et al. column 5, lines 37-40)

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 2634

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betsy L. Deppe whose telephone number is (703) 305-4960. The examiner can normally be reached on Monday, Tuesday and Thursday (8:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (703) 305-4714.


**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 305-4700.

  
Betsy L. Deppe  
Primary Examiner  
Art Unit 2634  
June 30, 2004